

IN THE CLAIMS

1. (original) A method of producing high pressure hydrogen on-demand comprising:
providing a hydrogen feedstock at a high pressure;
providing water at a high pressure;
heating the hydrogen feedstock and water; and
placing the hydrogen feedstock and water into a catalytic reformer, wherein the hydrogen feedstock and water are exposed to a catalyst in the reformer under high pressure conditions.
2. (original) The method of claim 1, wherein the hydrogen feedstock is natural gas.
3. (original) The method of claim 1, wherein the hydrogen feedstock is methanol.
4. (original) The method of claim 1, wherein the hydrogen feedstock is methane.
5. (original) The method of claim 1, wherein the hydrogen feedstock is ethanol.
6. (original) The method of claim 1, wherein the hydrocarbon feedstock is propane.
7. (original) The method of claim 1, wherein the hydrogen feedstock is butane.
8. (original) The method of claim 1, wherein the hydrogen feedstock is naphtha or gasoline.
9. (original) The method of claim 1, wherein the hydrogen feedstock is ammonia.
10. (original) The method of claim 1, wherein the hydrogen feedstock is military-specification turbine fuel, commercial turbine fuel, diesel fuel, kerosene, or fuel oil.

11. (original) The method of claim 1, wherein the hydrogen feedstock is natural gas condensate liquids or natural gasoline.
12. (original) The method of claim 1, further comprising maintaining a pressure in the catalytic reformer in the range of 2,000 to 12,000 psi.
13. (original) The method of claim 1, further comprising maintaining a pressure in the catalytic reformer in the range of 3,200 to 12,000 psi.
14. (original) The method of claim 1, further comprising maintaining a pressure in the catalytic reformer to be greater than 3,200 psi.
15. (original) The method of claim 1, further comprising maintaining a temperature in the catalytic reformer in the range of 375° to 640° Celsius.
16. (original) The method of claim 1, further comprising:
maintaining a pressure in the catalytic reformer in the range of 2,000 to 12,000 psi; and
maintaining a temperature in the catalytic reformer in the range of 375° to 640° Celsius.
17. (original) The method of claim 1, further comprising separating hydrogen from other reformer output gases.
18. (original) The method of claim 17, wherein carbon dioxide and water are separated from hydrogen using a condenser.
19. (original) The method of claim 1, wherein carbon dioxide is separated and recovered for sequestration or other utilization option.

20. (original) The method of claim 1, further comprising using produced hydrogen to power a fuel cell.

Claims 21-53 (canceled).